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ABSTRACT

Various studies of stress are considered in relation to certain aspects of developmental theory. "Stress" is defined as a general rubric which encompasses a whole spectrum of interacting elements including developmental status, individual coping styles, temperamental characteristics, and environmental influences. Case material is presented in a form which illustrates the developmental-ecological sequence in the life of a young child. Emphasis is placed on the context of the child's experience in terms of his parent's own developmental histories, conditions in the household, the child's individual characteristics, and the influence of social networks and community support systems. The materials reviewed are intended to clarify the interplay between developmental phenomena, life events, and the social milieu. (Author)

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Stressful events in early childhood: an ecological approach

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Summary

Many factors influence the way a child responds to stress. This paper describes how the developmental-ecological approach can clarify the interplay between developmental and environmental phenomena. Relevant findings from the literature on stress are considered in relation to certain aspects of developmental theory. This approach intends to emphasize the multiple realities in the lives of children and encourage more effective interventions on their behalf.

Stressful events in early childhood:
an ecological approach

The impact of stressful events on the development of young children has been studied from many different perspectives. Researchers have documented the effects of traumatic or threatening occurrences such as illness and injury, hospitalization, divorce, and a death in the family (Graham and George, 1972; Kliman, 1968; Morrison, 1975; Murphy, 1962; Parness, 1975). Other studies have considered the effects of neutral or desirable events which may not be perceived as stressful but which nevertheless may require modifications in the child's usual pattern of behavior (Gersten, et.al., 1974). Analyzing the diverse findings from these studies, it becomes apparent that a stressful event can not be defined merely in terms of its particular qualities or apparent effects. "Stress" may have multiple meanings, depending on the context in which it is experienced as well as the perspective from which it is studied.

Specialists in child development have come to recognize that a complex interplay of forces influences the way a child reacts to stress, how he copes, makes use of available resources, recovers, or fails to recover. The forces involved in this interplay may be termed the "developmental-ecological constellation"(Fig. 1). This constellation consists of many interdependent elements including family history, prenatal conditions, constitutional and temperamental factors, family interactions, cultural, religious, and ethnic traditions, developmental progress and physical health, as well as a variety of other social and environmental influences.

When development is viewed from an ecological perspective, the implications of each of these dimensions are considered in relation to the whole context of the child's experience. For example, if a child enters a Day Care program in the middle of a hard winter, at a time when his parents have separated and his grandmother is terminally ill, his developmental tasks become more complex and his adjustment may be delayed or disturbed. In such a case, the emergence of "defense mechanisms" or "coping patterns" should be viewed, not as individual or isolated phenomena, but as manifestations of this child's response to a particular constellation of developmental and environmental forces. We will refer to this case later to illustrate how the developmental-ecological approach can be used to clarify case material.

The ecology of stress: a classic approach

It is useful, from time to time, to return to a classic text and reconsider it in the light of recent research and theory. One such text which is particularly relevant to the issues discussed here is the first chapter in Childhood and Society (Erikson, 1950). In this chapter, Erikson illustrates his ideas through the vivid unfolding of case histories. The first case describes a neurological crisis in a small boy. Sam, age three, had a strange attack a few days after his grandmother died. The attack was subsequently diagnosed as "idiopathic epilepsy." He had a similar attack a month later, the same day he found a dead mole in the backyard. A third attack occurred after the boy had accidentally crushed a butterfly in his hand. It was thought that Sam had a "low threshold for convulsive explosion" and that the idea or event of death had precipitated his attacks. Otherwise, neither his birth history, developmental

history, nor his neurological condition between attacks showed any specific pathology. His general health was excellent.

In discussing this case, Erikson describes the context of experience surrounding Sam's attacks. In the light of recent literature on stress and its relation to the etiology of mental and physical illness, it is instructive to review Erikson's material. In that paper, he considered the historical context of Sam's anxiety, the religious and ethnic traditions that had contributed to the family's attitudes, the situation of a Jewish family isolated in the midst of a Christian community, and the way Sam's mother had reacted to the event of the grandmother's death. These factors are described in a kind of counterpoint with Sam's own developmental progress, the rapid advances he had made in motor activity, in mental curiosity, and in the emergence of an "aggressive infantile maleness" that Erikson notes usually appears at the age of three or four and manifests itself according to differences in custom and individual temperament. All of these factors are considered in relation to the somatic problem, the "brain irritation" as Erikson calls it, and the burden it placed on the life of this child. The question that seems to be central in this case is whether the brain lesion would have caused the boy's temperament to be more irritable, or whether his temperament would make the brain lesion more significant than it would have been in a boy with a different background in a different family. Another way to frame this question is: what is the significance of a stressful event for this child, given the context of his developmental status and temperament, the social milieu of his family and community, and his somatic vulnerability.

In analyzing this case, Erikson traces these elements to three inter-

dependent processes: the somatic, the psychological, and the social. He suggests that the meaning of any item which may be located in one of these three processes is co-determined by its meaning in the other two. An item in one process gains relevance by giving significance to and receiving significance from items in the others.

Using Erikson's text as a guide, we can return to more recent findings relating to life events, stress, and developmental tasks.

Approaches to the study of stressful events.

Mason (1975) has reviewed the evolution of the concept of stress from its early formulations in the works of Cannon and Selye to its present status. He points out that studies of stress have approached the problem in four different ways. The first approach focuses on the stimulus parameters or "stressors." This approach is exemplified by the work of Holmes and Rahe (1967) who have attempted to identify the elements that distinguish more stressful from less stressful life events and to develop an "index" of stressful events.

The second approach is represented by those who concentrate on the response to stress and examine its emotional and physical manifestations. Examples of this approach are the studies of the effects of maternal deprivation, the susceptibility of children to specific illnesses and accidents, and the types of emotional disturbance that develop as the aftermath of stress (Boyce, 1977; Stein and Charles, 1971; Heisel, 1972; Sibert, 1975).

The third approach focuses on the interaction between stressful events and their subsequent manifestations in mental or physical illness. This approach is analyzed by Dohrenwend and Dohrenwend (1974) and utilized

in certain studies of Paykel (1974) and Gersten and her colleagues (1974).

The fourth approach conceives of stress as a general rubric which encompasses a whole spectrum of interacting factors including developmental status, individual coping styles, and the social milieu. It is this latter approach which is advocated in this paper. This wider definition of stress allows us to utilize data from a variety of disciplines - from social, developmental and ecological psychology as well as from psychiatry, general medicine and epidemiology. It is this approach that would encourage researchers to examine the developmental parameters of stress and to make appropriate use of the relevant aspects of developmental theory in analyzing the context and outcome of stressful events in childhood.

Stressful events in childhood

Wolff (1972) has suggested that the crisis points which occur during the normal course of development influence the perception of and the reaction to stressful events at any given period. For example, a child's response to the illness or death of a close relative will depend on the developmental status he has achieved in regard to separation and object constancy. Similarly, a child's perception of violence, abuse, or conflict in the family will be colored by the progress he himself has made in controlling his own aggressive impulses.

Coddington (1971) has considered the significance of life events as etiologic factors in the diseases of children. He has observed the impact of various stressful events and changes at different age levels. He found that certain events have more of an impact at certain age levels and that the quality and quantity of adjustment required to cope with stress changes through time. These findings highlight the need to investigate the relation

between developmental phenomena and stress.

The recent work of Cochran and his associates indicates another promising direction. Cochran suggests that the social networks of a family exert significant influences on the development of the children in that family. The question of how social networks can serve as buffers or moderators of stress in childhood remains to be investigated.

These considerations of stress and its implications for human development have been stimulated by our work as mental health consultants in a three-county rural area in Pennsylvania Appalachia. In the process of training staff, developing new services and responding to case presentations in which young children are the focus of concern, we have gradually modified some of our own ideas and sharpened our perceptions. We have learned that the meanings of stress for these families living in dilapidated mine patches and small villages and trailer camps and isolated gullies may be quite different from the meanings of stress for an inner-city family. The frequency and impact of stressful events in the lives of these children, the influence of the rural setting, the social milieu and the community support systems which are available to them - these issues have become central in our work.

The developmental-ecological approach applied to case consultation

In considering an individual case and recommending educational or therapeutic interventions, we have found it useful to organize the case material in terms of the developmental-ecological sequence. This method clarifies the relations between developmental phenomena, stressful events, and other relevant factors in the child's life. It encourages teachers, case workers and paraprofessionals to "think ecologically," to ask about

significant developmental milestones and to consider them within the broader context of the child's experience. The following case material serves to illustrate this approach.*

Freddie P. was the subject of a case consultation at a Day Care Center located in a small rural community. He had entered the program one week before his second birthday. He was three years old at the time of the consultation.

During the case presentation, it became evident that this child had experienced an unusually heavy concentration of stressful events. By the age of three, he had already endured the separation of his parents, various illnesses and hospitalizations, the death of his grandmother, and unexpected separations from significant caretakers. The main purpose of the case consultation was to identify the stressful events, understand their possible impact on his behavior and development, and plan interventions which could address the losses and support the gains in the most optimal way. In order to focus attention on the juxtaposition of developmental milestones and life events, the case material was organized in the form of the developmental-ecological sequence (Fig. 2).

The developmental-ecological sequence

The sequence consists of four dimensions: the season of the year, the child's chronological age, his developmental progress in reference to specific milestones and temperamental characteristics, and the life events and crises which occurred during this sequence.

Season. When parents are asked to discuss the developmental progress of their children, they often find it difficult to describe a given sequence

*Case material was prepared by Carol White.

of events or remember the timing of certain developmental milestones. In our interviews with parents, we have found that the turning of the seasons and the weather conditions have a strong impact on the lives of families, especially those in rural areas. Encouraging parents to link developmental progress with the time of year not only facilitates their recall of specific events, but also makes it easier to recount the wider context of their childrearing experiences. Associating weather and seasons with the child's developmental progress provides parents with a natural background on which to share pertinent and useful information.

Chronological age. Although it is difficult for parents to remember dates, they can usually associate a particular event with their child's age. Recording the child's age in relation to developmental milestones and life events makes it possible to see at a glance the temporal framework of the child's life.

Developmental milestones and temperamental characteristics. Developmental achievements cannot be reduced to a series of cause and effect sequences or subsumed under a single category. Rather, they must be seen as evolving within a complex constellation of inter-related factors. The ecological approach allows us to view the sequence of developmental milestones in juxtaposition to corresponding life events and to consider the possible influence of temperamental characteristics on the developmental process.

Life events and crises. The ecology of child development includes many events and forces which may not, at first glance, appear to be directly related to the child. However, it is obvious that virtually every significant crisis, change, or stressful situation that occurs within a family will have some effect on the childrearing environment. Charting

the sequence of life events in relation to the season of the year, the child's age, and the emergence of developmental milestones enables us to highlight the subtle as well as the obvious interplay between the developmental and environmental aspects of the child's life.

Discussion

The developmental-ecological sequence which is presented here illustrates the single case of Freddie. It also provides an example of how this approach can be used to clarify case material. In this case, the three processes described by Erikson (1950) - the somatic process, the ego process, and the societal process - are seen in dynamic interaction. Our task is to understand how each of these processes affects the other, and how the meaning of each life event is co-determined by the meaning of corresponding phenomena. We need to consider the possible significance of Freddie's illnesses and hospitalizations in relation to his speech development, behavioral manifestations and family interactions. In addition, we must be aware of the role of the community in supporting or neglecting the well-being of this child.

As the participants in the case discussion explored the context of Freddie's life and the sequence of stressful events which he had experienced, they were able to achieve a new sense of appreciation for this child's situation. They began to inquire about the support systems which could be mobilized for him, the kinds of help his mother might accept and use, and the individuals and agencies who could respond most effectively to the needs of this family. The discussion led to a consideration of the possible impact of stressful events on the lives of other Day Care children and of how the staff could become more sensitive to these issues.

In Erikson's discussion of the implications of stressful events in the lives of children (ibid., 1950), he points out certain trends in the history of science. He notes that the three processes - somatic, ego, and societal - have generally been treated as separate entities. They have been investigated by three different scientific disciplines - biology, psychology, and the social sciences - "each of which studied what it could isolate, count, and dissect" (ibid., p.37). The knowledge that has emerged from these studies reflects the limitations in their methodology. In order to understand that the three processes are actually three aspects of a single process - human development - we must design methods which are appropriate to the task. The developmental-ecological approach represents one attempt to clarify each of these aspects and consider their meaning within the total context of the child's life.

Conclusion

Stressful events occur in the lives of children. The central questions to be asked are when and where and how these events occur, what are the positive and negative factors, who can help, and what do we need to know in order to provide appropriate interventions.

The model presented here can serve at least three purposes: (1) It provides a coherent way to organize, consolidate, and present information concerning the developmental progress of an individual child; (2) It serves as a vehicle with which to stimulate awareness, on the part of parents, teachers, case workers, consultants, and paraprofessionals, of the interplay between developmental and environmental factors; and (3) In a more refined form and used in combination with other methods, it can provide more relevant data for the study of the ecology of childhood.

The most efficient approach and methods for investigating these complex issues have yet to be designed. We have before us the enormously difficult task of developing a model which takes into account not only the environmental variables but the social, developmental, psychological and somatic characteristics of the individual child. An approach which will succeed in clarifying these complexities will hopefully emerge from those fortunate collaborations which can generate enlightened, multi-disciplinary research.

FIGURE I

DEVELOPMENTAL-ECOLOGICAL CONSTELLATION

PARENTS	HOUSEHOLD	CHILD	SOCIAL NETWORKS AND COMMUNITY SYSTEMS
MOTHER: childhood; health history; education; significant achievements and setbacks; stressful events; marital situation; pregnancy	HOUSEHOLD: siblings; caretakers; living conditions; climate of home; family rituals and observances	CHILD: birth; health history and health care; developmental milestones; temperament; special problems and limitations; special abilities and strengths	SOCIAL NETWORKS: extended family; friends; neighbors; co-workers; gate-keepers
FATHER: marital situation; work role; stressful events; significant achievements and setbacks; education; health history; childhood			COMMUNITY SYSTEMS: medical; educational; welfare; legal; MH/MR; religious; recreational

FIGURE 2

Developmental-Ecological Sequence

Case Study: Freddie P.
Chronological Age: 3:0

Season	Age	Developmental Milestones & temperamental characteristics	Life events and crises
Spring-Fall	Prenatal	Conception	Mother conceives a child with a man who is not her husband.
		Pregnancy	Pregnancy was unplanned.
			Mother and husband separate/Mother moves in with her parents.
Winter	0	Birth	Infant is born one month premature - jaundiced.
			Freddie is given the family name of his mother's husband.
Spring	0:6	An undemanding "pleasant" baby	Mother moves to housing project with Freddie and his four-year old half-brother. Freddie has regular visits with his own father.
	0:7	Sits without support	Freddie's father joins the household.
Summer	0:8	Crawls	
Winter	1:2-3	Weaning completed	
Spring	1:3	Walks	
Summer	1:7	Bladder control not yet established	Maternal grandmother is terminally ill. Mother assumes responsibility for her care.
Fall	1:10	First words (delayed)	Freddie is hospitalized twice for respiratory problems.

Developmental-ecological sequence (continued)

Season	Age	Developmental Milestones & temperamental characteristics	Life events and crises
Winter	2:0	Bowel training efforts fail.	Freddie enters infant/toddler Day Care program.
		Cranky, irritable behavior increases	Mother acknowledges her abusive, excessively punitive reactions to Freddie.
	2:1	Speech development is slow.	Freddie develops close relationship with Paul (male Day Care Aide).
			Freddie's father leaves household.
Spring	2:4		Freddie is hospitalized for three days - hernia.
			Paul leaves Day Care program.
Summer	2:6	Temper tantrums are more frequent and intense.	
			Maternal grandmother dies.
			Mother takes job as Aide in a pre-school.
Fall	2:9		Freddie continues to have intermittent visits with his own father and with his "other father" (mother's husband).
			Freddie's behavior is seen as problematic by his mother and the Day Care staff.
			Case consultation with Day Care staff
Winter	3:0	Bowel training efforts begin to succeed.	Mother agrees to participate in group counseling program.
	3:2		Freddie is transfered to pre-school.

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